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Capgemini and Instituto de Telecomunicações join forces to advance security in a quantum future

Lisbon, January 15, 2025 – [Capgemini](#) and [Instituto de Telecomunicações](#) (IT) announced today that they have signed an agreement in Portugal to collaborate on research, development, dissemination, and exploration of projects and services in the field of quantum security.

The collaboration will explore the immense potential of quantum technologies to advance data security and communication paradigms. Quantum cryptography is a crucial field of study in the era of quantum computing. It offers innovative solutions to ensure the security of digital communications in an increasingly connected world, where protecting sensitive information and confidential communications has never been more critical.

By working at the limits of quantum mechanics, Capgemini and Instituto de Telecomunicações share the ambition to create new encryption methods capable of withstanding the most sophisticated cyber threats. They aim to advance towards a new era of data security, where encryption protocols based on quantum principles will offer unmatched resistance against all types of threats, shaping the future of cybersecurity.

Instituto de Telecomunicações has created QuLab (Quantum Photonics Laboratory) that is dedicated to research in classical and quantum optical technologies, including the generation and characterization of quantum states, free-space optical communication, quantum cryptography and quantum sensing. Through its dedicated Quantum Lab, Capgemini will provide access to state-of-the-art hardware to contribute to accelerate applications of quantum technology. This Quantum Lab comprises a global network of quantum experts, partners, and specialist research facilities from across the Capgemini Group, combined with domain knowledge.

"By partnering with the Instituto de Telecomunicações, Capgemini is pursuing its commitment to exploring advanced quantum technologies to help clients gain advantage of cutting-edge applications. Together with the Institute, we are working to prepare a quantum-safe environment, now and in the future," said João Neves, Head of Technology and Innovation at Capgemini Engineering in Portugal.

"In the QuLab, and more generally at Instituto de Telecomunicações, we develop quantum safe technology by having theory and experimentation working hand in hand. In rapidly developing fields such as quantum and post-quantum cryptography, a fundamental understanding of physical (quantum) phenomena can lead to groundbreaking new developments in the lab. By partnering with Capgemini, we intend to create a strong connection from fundamental science to consumer products," said Emmanuel Zambrini Cruzeiro, Professor at Instituto Superior Técnico who is coordinating the QuLab and the Quantum Physics of Information group at the Instituto de Telecomunicações.

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About Instituto de Telecomunicações
Based in Portugal, Instituto de Telecomunicações (IT) is a private, not-for-profit organization, of public interest, a partnership of nine institutions with research and development in the field of Telecommunications. IT is actively involved in fundamental and applied research both at national and international levels. IT also plays its role towards public society with public awareness initiatives, knowledge transfer to industry, and by providing consulting services on a non-competing basis.
IT members (about 200 PhD holding integrated researchers) are organized into research clusters and groups, which cover most of the R&D areas in Telecommunications and supporting sciences and technologies. IT hosts annually about 250 PhD students and about 200 MSc students.

About Capgemini
Capgemini is a global business and technology transformation partner, helping organizations to accelerate their dual transition to a digital and sustainable world, while creating tangible impact for enterprises and society. It is a responsible and diverse group of 340,000 team members in more than 50 countries. With its strong over 55-year heritage, Capgemini is trusted by its clients to unlock the value of technology to address the entire breadth of their business needs. It delivers end-to-end services and solutions leveraging strengths from strategy and design to engineering, all fuelled by its market leading capabilities in AI, cloud and data, combined with its deep industry expertise and partner ecosystem. The Group reported 2023 global revenues of €22.5 billion.

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